

2017 Massachusetts Community Transportation Coordination Conference

PERCEPT: Indoor Navigation System

Presenters

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Facilitator

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PERCEPT: Indoor Navigation System

- The PERCEPT Indoor Navigation system enables blind users to independently navigate in unfamiliar indoor environments
- Successful trials conducted in UMASS and MBTA subway stations (Arlington Station and North Station) by over 60 blind and visually impaired human subjects
- The PERCEPT system was a finalist at the National Federation of the Blind Indoor Navigation Summit (NFB)
- Demonstration of PERCEPT iPhone application
- No internet required when providing navigation instructions
- PERCEPT tag is a Bluetooth device and iBeacon (location awareness through cell phone)
- PERCEPT tags provides GPS like capabilities; are mounted on ceilings and walls in subway stations
- There are 150 percept tags are in north station alone
- Received a MassDOT grant for the study, which includes the cost for the PERCEPT tags
- PERCEPT tags are battery operated and MassDOT has a contract for servicing the devices (repairs, replacing batteries)
- Automated instruction generation provide a cost-effective and scalable means to provide detailed navigation instructions
- Discussed phases and survey results
 - Phase A → Blind or visually impaired subject user PERCEPT and provide feedback
 - Improvements to PERCEPT based on trial feedback
 - Note: All participants thought PERCEPT was beneficial to them and said they would use it if available; Score of 7 is Highest, Score of 1 Lowest (all survey responses rated aspects of PERCEPT between 6-7)
 - Phase B → Returning participants from Phase A and new participants use PERCEPT

Q&A

- Why were some of the survey ratings 6 and 6.5 out of 7?
 - Survey questions were the only response we had from participants, did not ask follow-up of “why” did participants rank PERCEPT in a certain way
- Can user do a speech command?
 - Right now not available on Apple iPhone, waiting for Apple to allow application access
 - PERCEPT launched on an android platform

